

# OWL to LexGrid Mapping

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# OWL to LexGrid Mapping

OWL RDF Schema Features	LexGrid	Comments
<u><a href="#">Class (Thing, Nothing)</a></u>	concept	
<u><a href="#">rdfs:subClassOf</a></u>	association (attribute: forwardName = subClassOf, reverseName = hasSubClass)	
<u><a href="#">rdf:Property (ObjectProperty)</a></u>	association (between two classes) hasDomain, hasRange	
<u><a href="#">rdf:Property (DatatypeProperty)</a></u>	association (between one class (domain) and one association. hasDomain and hasDataProperty conceptProperty (define the range here)	

# Example

DatatypeProperty

```
<owl:DatatypeProperty rdf:ID="currency">
```

- ```
<rdfs:domain rdf:resource="#Money"/>
```

- ```
<rdfs:range  
rdf:resource="http://www.w3.org/2001/XMLSchema  
chema#string"/>
```

- ```
</owl:DatatypeProperty>
```

- As conceptProperty

- ```
<lgCon:concept id="Money">
```

- 

```
<lgCommon:entityDescription>Money</lgCo
```



# Examples

## As association

```
<lgRel:association id="hasDomain" forwardName="hasDomain" isReflexive="false" isSymmetric="false"
isTransitive="true" reverseName="kindIsDomainOf">
  <lgRel:sourceConcept sourceEntityType="association" sourceId="currency">
    <lgRel:targetConcept targetEntityType="concept" targetId="Money"/>
  </lgRel:sourceConcept>
```

```
<lgRel:association id="currency">
  <associationProperty propertyId="P0007" propertyName="isDatatypeProperty">
    <lgCommon:text>true</lgCommon:text>
  </associationProperty>
  <associationProperty propertyId="P0008" propertyName="isObjectProperty">
    <lgCommon:text>>false</lgCommon:text>
  </associationProperty>
</lgRel:association>
```

```
<lgRel:association id="hasDatatype" forwardName="hasDatatype">
  <lgRel:sourceConcept sourceEntityType="association" sourceId="currency">
    <lgRel:targetDataValue dataId="D0001">
      <lgRel:dataValue>string</lgRel:dataValue>
    </lgRel:targetDataValue>
```

# OWL to LexGrid Mapping

OWL RDF Schema Features	LexGrid	Comments
<a href="#"><u><i>rdfs:subPropertyOf</i></u></a>	Association subPropertyOf	
<a href="#"><u><i>rdfs:domain</i></u></a>	Association hasDomain	
<i>rdfs:range</i>	Association hasRange	
<a href="#"><u><i>Individual</i></u></a>	instance	

# OWL to LexGrid Mapping

OWL (In)Equality:	LexGrid	Comments
<a href="#"><u><i>equivalentClass</i></u></a>	association	
<a href="#"><u><i>equivalentProperty</i></u></a>	association	
<a href="#"><u><i>sameAs</i></u></a>	association	
<a href="#"><u><i>differentFrom</i></u></a>	association	
<a href="#"><u><i>AllDifferent</i></u></a>	association	

# Example

## EquivalentClass

```
<owl:Class rdf:ID="Father">
  <owl:equivalentClass>
    <owl:Class>
      <owl:intersectionOf rdf:parseType="Collection">
        <owl:Class rdf:about="#Person"/>
        <owl:Restriction>
          <owl:onProperty>
            <owl:FunctionalProperty rdf:about="#hasSex"/>
          </owl:onProperty>
          <owl:hasValue rdf:resource="#MaleSex"/>
        </owl:Restriction>
        <owl:Restriction>
          <owl:someValuesFrom rdf:resource="#Person"/>
          <owl:onProperty>
            <owl:ObjectProperty rdf:about="#hasChild"/>
          </owl:onProperty>
        </owl:Restriction>
      </owl:intersectionOf>
    </owl:Class>
  </owl:equivalentClass>
</owl:Class>
```

# Example

## EquivalentClass

```
<lgRel:association id="equivalentClass" forwardName="equivalentClass" isReflexive="true"
isSymmetric="true" isTransitive="true" reverseName="equivalentClass">
  <lgRel:sourceConcept sourceEntityType="concept" sourceId="Father">
    <lgRel:targetConcept targetEntityType="concept" targetId="A38"/>
  </lgRel:sourceConcept>
```



# OWL to LexGrid Mapping

OWL Property Characteristics:	LexGrid	Comments
<u><a href="#">inverseOf</a></u>	association (attribute inverse)	
<u><a href="#">TransitiveProperty</a></u>	association (attribute isTransitive)	
<u><a href="#">SymmetricProperty</a></u>	association (attribute isSymmetric)	
<u><a href="#">InverseFunctionalProperty</a></u>	association (attribute isReverseFunctional)	
<u><a href="#">FunctionalProperty</a></u>	association (attribute isFunctional)	

# OWL to LexGrid Mapping

OWL Property Restrictions:	LexGrid	Comments
<u><a href="#">Restriction</a></u>	association + qualifer	
<u><a href="#">onProperty</a></u>	association + qualifer	
<u><a href="#">allValuesFrom</a></u>	association + qualifer	
<u><a href="#">someValuesFrom</a></u>	association + qualifer	
<u><a href="#">intersectionOf</a></u>	anonymous class + ConceptProperty owl:isIntersection	

# Example

```
<owl:Class rdf:ID="Large-Format">  
  <rdfs:subClassOf rdf:resource="#Camera"/>  
  <rdfs:subClassOf>  
    <owl:Restriction>  
      <owl:onProperty rdf:resource="#body"/>  
      <owl:allValuesFrom rdf:resource="#BodyWithNonAdjustableShutterSpeed"/>  
    </owl:Restriction>  
  </rdfs:subClassOf>  
</owl:Class>
```

```
<lgRel:association codingSchemeId="p1" id="body" forwardName="body" isFunctional="false"  
isReverseFunctional="false" isSymmetric="false" isTransitive="false">  
  <lgRel:sourceConcept sourceCodingScheme="p1" sourceEntityType="concept" sourceId="Large-  
Format">  
    <lgRel:targetConcept targetEntityType="concept" targetId="BodyWithNonAdjustableShutterSpeed">  
      <lgRel:associationQualification associationQualifier="owl:allValuesFrom"/>  
    </lgRel:targetConcept>  
  </lgRel:sourceConcept>  
<associationProperty propertyId="P0021" propertyName="isDatatypeProperty">  
  <lgCommon:text>>false</lgCommon:text>  
</associationProperty>  
<associationProperty propertyId="P0022" propertyName="isObjectProperty">  
  <lgCommon:text>>true</lgCommon:text>  
</associationProperty>  
</lgRel:association>
```

# Example

```
<owl:Class rdf:ID="Father" >
  <owl:equivalentClass>
    <owl:Class>
      <owl:intersectionOf rdf:parseType="Collection">
        <owl:Class rdf:about="#Person"/>
        <owl:Restriction>
          <owl:onProperty>
            <owl:FunctionalProperty rdf:about="#hasSex"/>
          </owl:onProperty>
          <owl:hasValue rdf:resource="#MaleSex"/>
        </owl:Restriction>
        <owl:Restriction>
          <owl:someValuesFrom rdf:resource="#Person"/>
          <owl:onProperty>
            <owl:ObjectProperty rdf:about="#hasChild"/>
          </owl:onProperty>
        </owl:Restriction>
      </owl:intersectionOf>
    </owl:Class>
  </owl:equivalentClass>
</owl:Class>
```

# Example

```
<lgRel: association id="equivalentClass" forwardName="equivalentClass" isReflexive="true"
isSymmetric="true" isTransitive="true" reverseName="equivalentClass">
  <lgRel: sourceConcept sourceEntityType="concept" sourceId="Father">
    <lgRel: targetConcept targetEntityType="concept" targetId="A38"/>
  </lgRel: sourceConcept>
```

```
<lgRel: association codingSchemeId="" id="hasSex" forwardName="hasSex" isFunctional="true"
isReverseFunctional="false" isSymmetric="false" isTransitive="false">
  <lgRel: sourceConcept sourceEntityType="concept" sourceId="A38">
    <lgRel: targetConcept targetEntityType="concept" targetId="MaleSex">
      <lgRel: associationQualification associationQualifier="owl:hasValue"/>
    </lgRel: targetConcept>
```

```
<lgRel: association codingSchemeId="rdfs" id="subClassOf" forwardName="subClassOf" isFunctional="false"
isReflexive="true" isSymmetric="false" isTransitive="true" reverseName="hasSubClass">
  <lgRel: sourceConcept sourceEntityType="concept" sourceId="A38">
    <lgRel: targetConcept targetEntityType="concept" targetId="Person"/>
  </lgRel: sourceConcept>
```

```
<lgRel: association codingSchemeId="" id="hasChild" forwardName="hasChild" isFunctional="false"
isReverseFunctional="false" isSymmetric="false" isTransitive="false">
  <lgRel: sourceConcept sourceEntityType="concept" sourceId="A38">
    <lgRel: targetConcept targetEntityType="concept" targetId="Person">
      <lgRel: associationQualification associationQualifier="owl:someValuesFrom"/>
    </lgRel: targetConcept>
```

# Example

```
<lgCon:concept id="A38" isAnonymous="true">
  <lgCommon:entityDescription>Person and (hasSex has MaleSex) and (hasChild some
Person)</lgCommon:entityDescription>
  <lgCon:presentation propertyId="P0002" propertyName="textualPresentation"
isPreferred="true">
    <lgCommon:text>Person and (hasSex has MaleSex) and (hasChild some
Person)</lgCommon:text>
  </lgCon:presentation>
  <lgCon:conceptProperty propertyId="P0001" propertyName="type">
    <lgCommon:text>owl:intersectionOf</lgCommon:text>
  </lgCon:conceptProperty>
</lgCon:concept>
```

# OWL to LexGrid Mapping

OWL	LexGrid	Comments
<i>UnionOf</i>	ConceptProperty isUnion = true	
<i>complementOf</i>	association	
<i>OneOf</i>	ConceptProperty	
<i>hasValue</i>	association qualifier	
<u><i>minCardinality,</i></u> <u><i>maxCardinality,</i></u> <u><i>cardinality</i></u>	PropertyQualifer conceptProperty and associationProperty	
<u><i>disjointWith</i></u>	Association <i>disjointWith</i>	

# Example

```
<owl:Class>  
  <owl:unionOf rdf:parseType="Collection">  
    <owl:Class rdf:about="#Hot"/>  
    <owl:Class rdf:ID="Medium"/>  
    <owl:Class rdf:about="#Mild"/>  
  </owl:unionOf>  
</owl:Class>
```

```
<lgCon:concept id="A17" isAnonymous="true">  
  <lgCommon:entityDescription>Hot or Medium or Mild</lgCommon:entityDescription>  
  <lgCon:presentation propertyId="P0001" propertyName="textualPresentation"  
isPreferred="true">  
    <lgCommon:text>Hot or Medium or Mild</lgCommon:text>  
  </lgCon:presentation>  
  <lgCon:conceptProperty propertyId="P0002" propertyName="isUnion">  
    <lgCommon:text>true</lgCommon:text>  
  </lgCon:conceptProperty>  
  <lgCon:conceptProperty propertyId="P0003" propertyName="isIntersection">  
    <lgCommon:text>>false</lgCommon:text>  
  </lgCon:conceptProperty>  
  <lgCon:conceptProperty propertyId="P0004" propertyName="isEnumeration">  
    <lgCommon:text>>false</lgCommon:text>  
  </lgCon:conceptProperty>  
</lgCon:concept>
```



# Example

```
<owl:Class rdf:ID="Country">
  <rdfs:comment xml:lang="en">A class that is equivalent to the set of individuals that are described
in the enumeration - ie Countries can only be either America, England, France, Germany or Italy and
nothing else. Note that these individuals have been asserted to be allDifferent from each
other.</rdfs:comment>
  <rdfs:label xml:lang="pt">Pais</rdfs:label>
  <owl:equivalentClass>
    <owl:Class>
      <owl:intersectionOf rdf:parseType="Collection">
        <owl:Class>
          <owl:oneOf rdf:parseType="Collection">
            <Country rdf:ID="America">
              <hasShortName xml:lang="en">USA</hasShortName>
              <hasCapital>
                <Capital rdf:ID="Washington_DC"/>
              </hasCapital>
            </Country>
            ..... More countries here
          </owl:oneOf>
        </owl:Class>
      <owl:Class rdf:about="#DomainConcept"/>
    </owl:intersectionOf>
  </owl:Class>
</owl:equivalentClass>
</owl:Class>
```

# Example

```
<lgCon:concept id="A160" isAnonymous="true">
  <lgCommon:entityDescription>{ America England France Germany Italy} and
DomainConcept</lgCommon:entityDescription>
  <lgCon:presentation propertyId="P0001" propertyName="textualPresentation"
isPreferred="true">
  <lgCommon:text>{ America England France Germany Italy} and
DomainConcept</lgCommon:text>
  </lgCon:presentation>
  <lgCon:conceptProperty propertyId="P0002" propertyName="isUnion">
  <lgCommon:text>>false</lgCommon:text>
  </lgCon:conceptProperty>
  <lgCon:conceptProperty propertyId="P0003" propertyName="isIntersection">
  <lgCommon:text>>true</lgCommon:text>
  </lgCon:conceptProperty>
  <lgCon:conceptProperty propertyId="P0004" propertyName="isEunumeration">
  <lgCommon:text>>false</lgCommon:text>
  </lgCon:concep
```

# OWL to LexGrid Mapping

OWL Annotation Property	LexGrid	Comments
<a href="#"><u><i>rdfs:label</i></u></a>	Presentation	
<a href="#"><u><i>rdfs:comment</i></u></a>	Comment	
<a href="#"><u><i>rdfs:seeAlso</i></u></a>	EntitytProperty?	
<a href="#"><u><i>rdfs:isDefinedBy</i></u></a>	EntitytProperty?	
<a href="#"><u><i>AnnotationProperty</i></u></a>	???	

# OWL to LexGrid Mapping

OWL	LexGrid	Comments
versioning		
<a href="#"><u>versionInfo</u></a>	CodeScheme attribute representVersion	
<a href="#"><u>priorVersion</u></a>		
<a href="#"><u>backwardCompatibleWith</u></a>		
<a href="#"><u>incompatibleWith</u></a>		
<a href="#"><u>DeprecatedClass</u></a>	deprecated = true	
<a href="#"><u>DeprecatedProperty</u></a>	deprecated = true	